AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1-2 Cancelled

3. (Currently Amended) A communications node ~~according to Claim 2, wherein said electronic processor circuit determines the path loss~~ by subtracting the RSSI from a predetermined maximum power~~.~~ in a network including a plurality of nodes, said communications node including a transceiver to transmit and receive messages and having at least one communications link with a first node of the plurality of nodes, said communications node comprising:

an electronic memory circuit having network information stored therein; and

an electronic processor circuit which (i) determines path loss information across the at least one communications link by evaluating power data, including a received signal strength indication (RSSI), corresponding to a message received from the first node, the evaluating including subtracting the RSSI from a predetermined maximum power; (ii) distributes the path loss information to the network; and (iii) routes messages to the network based on path loss information.

4. Original) A communications node according to Claim 3, wherein said electronic processor circuit determines a minimum power level for transmission to the first node.

5 – 9 (Cancelled)

10. (Currently Amended) A communications node ~~according to Claim 1, wherein the network information~~in a network including a plurality of nodes, said communications node

including a transceiver to transmit and receive messages and having at least one communications link with a first node of the plurality of nodes, said communications node comprising:

an electronic memory circuit having network information, including ~~stored in said electronic memory circuit comprises~~ trace records, stored therein; and

an electronic processor circuit which (i) determines path loss information across the at least one communications link by evaluating power data corresponding to a message received from the first node; (ii) distributes the path loss information to the network; and (iii) routes messages to the network based on path loss information.

11. (Original) A communications node according to Claim 10, wherein said trace records are opaque with respect to said communications node.

12. (Original) A communications node according to Claim 10, wherein the trace records comprise operating parameters for the transceiver.

13. (Original) A communications node according to Claim 12, wherein said electronic processor circuit i) accesses the trace records through standardized software library calls via predefined common sets of names; and ii) uses predetermined software for internally manipulating predetermined trace records.

14. (Cancelled)

15. (Currently Amended) A method ~~according to Claim 14, wherein the power data comprises~~of operating a communications node in a network including a plurality of nodes, the communications node including a transceiver to transmit and receive messages, the

communications node having at least one communications link with a first node of the plurality of nodes, said method comprising the steps of:

determining path loss information across the at least one communications link by evaluating power data, including a received signal strength indication (RSSI), corresponding to a received signal from the first node;

distributing the path loss information to the network; and

routing messages to the network based on path loss information.

16. (Original) A method according to Claim 15, wherein the path loss is determined by subtracting the RSSI from a predetermined maximum power.

17. (Original) A method according to Claim 16, further comprising the step of determining a minimum power level for transmission to the first node.

18-33 (Cancelled).

34. (Original) A method of operating a communications router in an ad-hoc wireless network including a plurality of routers, the method comprising the steps of:

obtaining a received signal strength indicator (RSSI) for a message received from a first router of the plurality of routers;

determining a power level requirement for a message transmission between the communications router and the first router by subtracting the RSSI from a transmission power level of the first router; and

distributing the power level requirement to at least some of the routers in the network.

35. (Original) A method according to Claim 34, wherein the power level of the first router is a predetermined power level.

36. (Original) The method according to Claim 34, wherein the power level of the first router is provided in the message from the first router.

37. (Original) The method according to Claim 34, further comprising the steps of:

receiving power level requirements from the plurality of network nodes; and

selecting routing paths based on the power level requirements so as to minimize a network energy expenditure.

38. (Original) A method of estimating instantaneous minimum transmission power to close a link in a wireless network between a first node and a second node of a plurality of communication nodes with each node including transmitting means and receiving means, said method comprising the steps of:

monitoring by the first node, transmission signals from at least the second node in the network;

filtering energy data corresponding to the transmission signal with a linear predictive filter; and

outputting from the linear predictive filter a signal corresponding to a transmission energy requirement.

39. (Original) A method according to Claim 38, wherein the energy data is a received signal strength indicator.

40. (Original) A method according to Claim 38, wherein the energy data is a received power level.

41. (Original) A method according to Claim 38, wherein the energy data is path loss data.

42. (Original) A method according to Claim 38, wherein the energy requirement is a minimal transmit power level to transmit a signal from the first node to the second node.

43. (Original) A method according to Claim 38, further comprising the step of distributing the energy requirement to the plurality of nodes.

44. (Original) A method according to Claim 38, wherein the transmission signals monitored by the first node comprise side information.

45. (Currently Amended) A method according to Claim ~~38~~44, wherein the side information comprises data received from a third node of the plurality of nodes.

46. (Original) A communications node for estimating instantaneous minimum transmission power to close a link in a wireless network between said communications node and a first node of a plurality of communication nodes with each node including transmitting means and receiving means, said apparatus comprising:

means for monitoring transmission signals from at least the first node in the network; and

means for filtering energy data corresponding to the transmission signal, and for outputting a signal corresponding to a transmission energy requirement.

47. (Original) A communications node according to Claim 46, wherein the monitored transmission signals comprise side information.

48. (Original) A communications node according to Claim 47, wherein the side information comprises data received from a second node in the network.

49-51. (Cancelled)